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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/707,349

Filing Date: December 08, 2003

Appellant(s): TAKANO, TADASHI

Kabushiki Kaisha Morie
For Appellant

EXAMINER'S ANSWER

This is in response to the corrected appeal brief filed March 13, 2005 appealing from the Office action mailed September 10, 2004.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

The amendment after final rejection filed on December 17, 2004 has been entered.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. The rejection of claims 1 and 3-10 under 35 U.S.C. 112, second paragraph.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

The following is a listing of the evidence (e.g., patents, publications, Official Notice, and admitted prior art) relied upon in the rejection of claims under appeal.

| | | |
|---------------------|-----------------|---------|
| US Patent 5,864,192 | Nagate et al. | 01-1999 |
| US Patent 6,011,339 | Kawakami | 01-2000 |
| US Patent 1,584,502 | Apple | 05-1926 |
| US Patent 5,977,671 | Kim | 11-1999 |
| US Patent 4,496,866 | Yamamoto et al. | 01-1985 |
| US Patent 6,081,056 | Takagi et al. | 06-2000 |

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagate et al. (5,864,192) in view of Kawakami (6011339) and further in view of Apple (1,584,502).

Regarding claim 1, Nagate et al. shows a high power synchronous electric motor (Figure 22) comprised of a rotor having a rotor shaft carrying a plurality of circumferentially spaced permanent magnets (11), a stator (9) encircling said rotor and comprised of a plurality of poles around which coil windings (13) are formed, a high capacity leads (14a) positioned at one axial end of said poles in circuit with said coil windings (13), a magnet detector (16) positioned at the other axial end of said poles and cooperating with permanent magnets (11) for determining the rotational position of said rotor.

Nagate et al. does not show a high capacity terminal circuit and a resinous body encasing said poles, said windings, and said high capacity terminal circuit to form a single unit and end closures carrying bearing for journaling opposite ends of said rotor shaft directly and detachably fixed to said resinous body.

Kawakami shows a high capacity terminal circuit and a resinous body encasing said poles, said windings, and said high capacity terminal circuit to form a single unit in Figure 5 for the purpose of ensuring ready connection of the end portion of a winding to external lead wires.

Apple shows end closures (42, 43) carrying bearing for journaling opposite ends of said rotor shaft directly and detachably fixed to the resinous body (44) for the purpose of holding all of the parts of the stator together.

Since Nagate et al., Kawakami et al. and Apple are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include high capacity terminal circuit as taught by Kawakami et al. for the purpose discussed above.

It would also have been obvious at the time the invention was made to a person having ordinary skill in the art to use end closures and threaded fasteners as taught by Apple for the purpose discussed above.

Regarding claims 3-6, it is noted that Nagate et al., Kawakami and Apple also show all of the limitations of the claimed invention.

Claims 1 and 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami (6,011,339) in view of Kim (5,977,671). and further in view of Yamamoto et al. (4,496,866).

Regarding claim 1, Kawakami shows all of the limitations of the claimed invention except for a magnet detector positioned at the other axial end of said poles and cooperating with permanent magnets for determining the rotational position of said rotor and end closures carrying bearing for journaling opposite ends of said rotor shaft directly and detachably fixed to said resinous body.

Kim shows a magnet detector (247) positioned at one axial end and cooperating with permanent magnets (260) for determining the rotational position of said rotor for the purpose of controlling the motor operation.

In addition, Yamamoto et al. shows the end closures (12, 13) with threaded fasteners (6) for the purpose of supporting the rotor rotation.

Since Kawakami et al., Kim and Yamamoto et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to position a magnet detector at the other axial end of said poles and cooperating with permanent magnets for determining the rotational position of said rotor as taught by Kim for the purpose discussed above.

It would also have been obvious at the time the invention was made to a person having ordinary skill in the art to use end closures and threaded fasteners as taught by Yamamoto et al. for the purpose discussed above.

Regarding claims 3-7, it is noted that Kawakami et al., Kim, and Yamamoto et al. also show all of the limitations of the claimed invention.

Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami in view of Kim and Yamamoto et al. and further in view of Takagi et al. (6,081,056).

Regarding claims 8-10, the motor of Kawakami modified by Kim and Yamamoto et al. includes all of the limitations of the claimed invention except for the insulating material.

Takagi et al. shows the insulating material (36) for the purpose of isolate the electrical conductors (35).

Since Kawakami et al., Kim, Yamamoto et al. and Takagi et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to imbed the terminals instead of using separate insulating layer (30) as taught by Takagi et al. for the purpose discussed above.

(10) Response to Argument

Before answering every applicant's arguments, the examiner would respectfully like to present few well-known facts in the art of motor and generator. In every permanent magnet rotor motors, there must be a terminal circuit between the stator windings and a power source because electric current must be flowed from a power source to the windings in order to operate the motor. It is also well known that the terminal circuit is integrally molded with the stator core and the stator windings by resin for the purpose of improving space occupation percentage and ensuring ready connection of the end portion of a winding to external lead wires as shown in Kawakami and in many other references cited by the examiner in FORM PTO-892 dated 4/1/04 and 9/10/04.

It is well known to include a magnet detector in the motor for the purpose of monitoring the rotor position. In the art of motor and generator, the use of magnet detector is not a new useful invention because it is disclosed in Nagate and Kim as well as in many other references cited by the examiner in FORM PTO-892 dated 4/1/04 and 9/10/04.

The use of end plates carrying bearings in order to support the rotor and the idea of mounting these end plates directly to the axial sides of the resin mold stator are neither new invention. Apple and Yamamoto et al. and many other references cited by the examiner in FORM PTO-892 dated 4/1/04 and 9/10/04 show the features.

Finally, in the art of motor and generator, it is well known that the motor housing can be made with a cup shape and an end plate as in Figure 1 of Shirakawa and Figure 4 of Kawakami or with two end plates as shown in Figure 2 of Shirakawa, Figure 3 of Apple (1584502) and Figure 22 of Nagate et al. (5864192).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In fact, Nagate et al. teaches broadly that "the stator coil 13 is connected to an external power supply through a lead 14a" in column 8, lines 2-5. One having ordinary skill in the art would have to look for a way to connect the stator winding (13) with the power lead (14a). Kawakami clearly shows the ring-shaped high capacity terminal circuit in Figure 11-13, which is monolithically molded with the stator core and stator windings for the purpose of providing a terminal connection between the power leads

and the stator windings while reducing size. It is noted that the motor of Kawakami must be brushless because the rotor is a permanent magnet rotor (column 6, lines 65-67).

In addition, because the end plates of Nagate et al. can only engage the stator core laminations only when the stator is not molded, one having ordinary skill in the art would have to look for another way to mount the end plates carrying bearing in order to support the rotor. Fortunately, Apple clearly teaches the feature in Figure 3 and lines 13-18.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine the references is in the knowledge generally available to one of ordinary skill in the art. The examiner would like to present to the boards another way why one having skill in the art would do in order to obtain a complete motor from Apple. Apparently, Apple does not show a rotor and a magnet detector. Apple neither shows how the power can be provided to the stator windings (16). Apple only teaches a molded stator core with a mounting arrangement for the two end plates. One having ordinary skill in the art of motor would look for the permanent rotor (8) with a magnet detector (16) of

Nagate et al. and a high terminal circuit (20) of Kawakami in order to complete the machine of Apple. The examiner believes that he has made out a *prima facia* case of obviousness.

In addition, references may be combined although none of them explicitly suggests combining one with the other. *In re Nilssen*, 7 USPQ2d 1500 (Fed. Cir. 1989).

Regarding the applicant's argument on claim 4, if "a sensor element fixed to the other end of the resinous body", it does not have to mean that the sensor is directly fixed to the resinous body. (A door is fixed to a wall although it is mounted by hinges on the doorframe, which is nailed or bolted to the wall.) In this case, the sensor (16) of Nagate et al. is mounted on the end plate (3), and if the end plate is mounted on the resinous body as taught by Apple, it could be said that "the sensor is fixed to the resinous body." As a result, the rejection of claim 4 as being unpatentable over Nagate et al. in view of Kawakami and further in view of Apple is proper.

Before discussing further, the examiner would like to point out that claim 7 requires an end cap for covering the end plate and the sensor element implying the fact that the sensor is mounted outside of the end plate as shown in Figure 1 of the present application. The examiner admits that Nagate et al., Kawakami, and Apple do not show such feature. However, without claim 7, the scope of claims 1 and 4-6 do not require such feature.

Nevertheless, it is well known in the art of motor that the sensor can be mounted inside of the end plate or outside of the end plate with an extra end cap to cover the

sensor and the open end of the end plate as shown in Kim and in many other references cited by the examiner on FORM PTO dated 4/1/04 and 9/10/04.

Moreover, by showing more than one rejections, the examiner believes he has demonstrated that the *prima facia* case of obviousness is made because the motivation to combine the references is in the knowledge generally available to one of ordinary skill in the art.

Regarding the Takagi et al., the examiner would like to show that it is well known to cover the terminal with insulating material. In the art of motor and generator, electric conductor must either be insulated or separated in order to avoid short-circuiting or electrocuting. Kawakami shows the terminals (22, 24, 26) being separated with the insulating layers (30) while Takagi et al teaches that insulation can be made with insulating material (36) covering the conductor (35).

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


Dang Dinh Le

DANG LE
PRIMARY EXAMINER

3/28/05

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